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TITLE : METHOD FOR USING CHLORINE TRIFLUORIDE IN CLEANING SURFACE OF THIN FILM FORMING DEVICE

ABSTRACT : PROBLEM TO BE SOLVED: To allow a chlorine trifluoride gas to react with the depositing metal or its compd. which is gasified, to effectively remove the deposit at a low cost and to clean the surface of a thin film forming device without eroding it by introducing the chlorine trifluoride gas of specified concn. into the device at a relatively low temp.

SOLUTION: A chlorine trifluoride gas at the high concn. of 50 to 100vol.% is introduced at room temp. to 250°C into a thin film forming device of CVD, vacuum deposition, sputtering, thermal spraying, etc. The chlorine trifluoride with the b.p. at 12°C has a strong oxidizing force and is obtained by the reaction of gaseous chlorine with gaseous fluorine. The chlorine trifluoride reacts with the metal such as W, Si and Ti, its alloy, nitride, carbide, etc., deposited in the device, and the reaction product is gasified and easily discharged outside the device. Consequently, the surface of the device is cleaned at a low cost in a short time without need for a plasma producer, etc., and the undamaged clean surface is exposed.

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